The practical experiences from EPC consulting services
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BUILDING PARTNERSHIPS FOR ENERGY SECURITY
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1. Initiation of project

1.2. Conclusions from completed feasibility study, other investigations and collected data.

Barriers:

- Why EPC and not a conventional method?

Solution:

- Guaranteed saving
1. Initiation of project

- 1.3. Decide the property portfolio to be considered in a proposed project.

Barriers:
- Clients would like to include all buildings with highly neglected maintenance.

Solution:
- All neglected maintenance cannot be paid for by savings in energy.
1. Initiation of project

- 1.5. Decide strategies for two systems in a proposed project.

Barriers:
- Normally there is a mix of different systems and they are not compatible.

Solution:
- Streamlining.
1. Initiation of project

• 1.6. Data collection for the property portfolio to be considered in a proposed project.

Barriers:
- Lack of staff to do the work. They are normally busy in their day to day work.

Solution:
- The project work must be given priority. No outcome without input.
1. Initiation of project

- 1.7. Scope; *What should a proposed project include.*

**Barriers:**
- *Property directors hope to solve the problem of all neglected maintenance.*

**Solution:**
- *All neglected maintenance cannot be paid for by savings in energy.*
1.9. Decision making process

**Barriers:**
- Questions by economists, directors and trustees about the validity of the savings guarantee;
- *Is it a real guarantee?*

**Solution:**
- *Visit clients that have carried out EPC projects and study how effective the savings guarantee had proved to be.*
2. Preparations

• 2.1. Appoint project organization for Preparations and Phase 1.

Barriers:
- Some clients do not from the beginning understand the extent of work it takes to carry out an EPC project.

Solution:
- Visit clients that have carried out EPC projects and get information about their organization.
2. Preparations

2.2 Procurement

• 2.2.1 Prepare basis of tender

Barriers:

- No client has run an EPC project earlier. It takes time to understand the project design and the implications.

Solution:

- To allocate sufficient time for review of the documents
2. Preparations

• 2.2.7 Examination of tenders and award of contract

Barriers:

- Difficulties to follow Public Procurement Act (PPA).

Solution:

- To have extensive knowledge about PPA and while needed get advice from expert lawyers on Public Procurement.
3. Phase 1 “Project development”

• 3.1. Participate in meetings with the ESCO

Barriers:
- Poor performance of ESCO’s energy auditors. The energy efficiency measures are of substandard.

Solution:
- Issue notification of defects to ESCO and demand rectification and improvement
3. Phase 1 “Project development”

• 3.2. Minutes from the project- and technology meetings

Barriers:
- Incorrect or contradictory formulations

Solution:
- Careful reading and demand adjustments.
4. Phase 2 “Project implementation”

- 4.1. Appoint project organization for Phase 2

**Barriers:**
- *The extent of client’s work in Phase 2 is much greater than in phase 1.*

**Solution:**
- *Increase the set of persons.*
4. Phase 2 “Project implementation”

- 4.3. Check adjust and confirm the minutes from the site-, design- and economy meetings.

Barriers:
- Incorrect or contradictory formulations.

Solution:
- Careful reading and demand adjustments.
4. Phase 2 “Project implementation”

• 4.7. Scrutinize the design documents prepared by the ESCO; civil works, ventilation-, heating and sanitation-, electrical-, cooling-, climate control and communication systems.

Barriers:
- Incorrect or substandard documents;
- Lack of time for checking.

Solution:
- Demand adjustments and improvements.
4. Phase 2 “Project implementation”

• 4.8. Time schedule for execution of contract works

Barriers:
- Delay by ESCO.

Solution:
- Impose fine according to agreement.
4. Phase 2 “Project implementation”

4.9. Handle Alterations and Additions

Barriers:
- ESCO claiming additions for work included in the contract;
- The EPC contract is a performance contract;
- The ESCO is responsible for design work and execution so as to achieve the technical performance and the energy savings.

Solution:
- Well formulated contract agreements;
- Tirelessly defending client’s rights under the contract
4. Phase 2 “Project implementation”

• 4.10. Invoice-verification for Contract works and Alterations and Additions

Barrier:
- ESCO claiming payments for works not yet carried out.

Solution:
- Visit the actual work spots to verify extent of work carried out.
4. Phase 2 “Project implementation”

• 4.11. Final Inspection of works

Barriers:
- ESCO protesting against noted defects in inspection report;
- Delay by ESCO in rectification of defects.

Solution:
- Proper and detailed description of works in the agreement;
- Impose fine for delay according to agreement.
4. Phase 2 “Project implementation”

- 4.13. Administer rectification of defects appearing during the Guarantee period

- The ESCO is during the Guarantee period responsible for rectification of defects appearing in materials and goods, execution and performance / functioning.

**Barriers:**
- ESCO rejecting responsibility for the reported defects;
- Delay by ESCO in rectification of defects.

**Solution:**
- Proper and detailed description of works in the agreement;
- Impose fine for delay according to agreement.
4. Phase 2 “Project implementation”

4.14. Guarantee inspection

Barriers:
- ESCO protesting against noted defects in the guarantee inspection report;
- Delay by ESCO in rectification of defects.

Solution:
- Proper and detailed description of works in the agreement;
- Impose fine for delay according to agreement.
5. Phase 3 “Project Follow up”

• 5.5. Report to ESCO such changes in buildings or use of buildings that have impact on the energy savings guaranteed by the ESCO

Barriers:
- The client do not keep track on changes with a result that the follow up work becomes problematic.

Solution:
- Develop a system to make it easy for the property managers to report.
5. Phase 3 “Project Follow up”

- 5.7. Energy optimization

**Barriers:**

- The client does give priority to this. If he did there will be still more savings.

**Solution:**

- Create incentives for own staff;
- Employ energy hunters.
5. Phase 3 “Project Follow up”

- 5.9. Participate in annual Meetings with the ESCO

**Barriers:**

- *Mistakes in the calculations submitted by the ESCO.*

**Solution:**

- *Total checking and verification by using the Excel-sheet.*
About the software Certus

- The calculations are performed according the DUR-method
- Adjustments are made for the building's unique influence from the outside temperature
- Based on purchased energy, which avoids large uncertainties
- Follow-up on a monthly basis
- A property owner can fill in all the details and include the program to the Agreement
- Each building will have its own profile of its impact from the outdoor temperature
- It provides clear information in order to optimize operation of buildings
- It is based on the published book with the title…….
- Certus is today used by several major property owners in Sweden

The DUR-method is also designed to prescribe and monitor the energy requirements for new buildings. It is today included in contracts for new constructions in Sweden.